

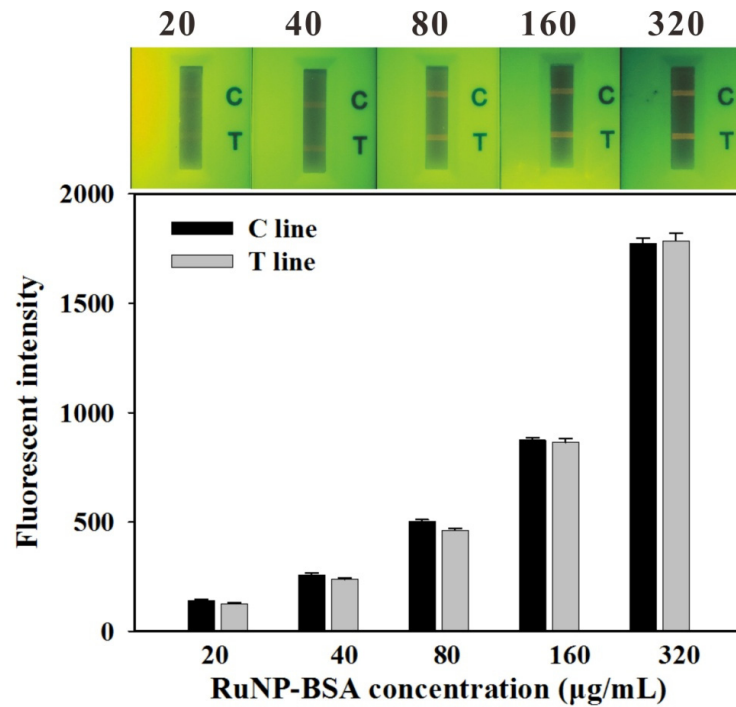
# Supplementary Materials: Silver Nanoparticle-based Fluorescence-quenching Lateral Flow Immunoassay for Sensitive Detection of Ochratoxin A in Grape Juice and Wine

Hu Jiang, Xiangmin Li, Ying Xiong, Ke Pei, Lijuan Nie and Yonghua Xiong

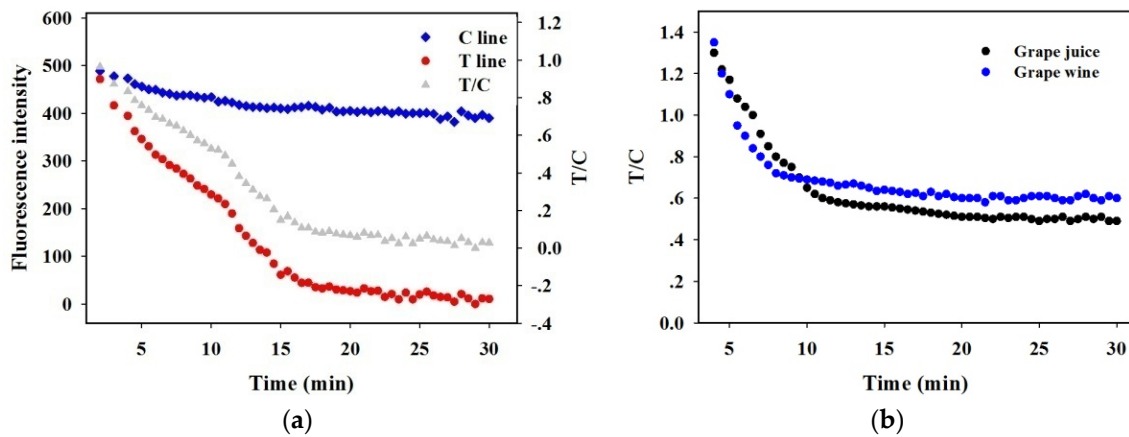
**Table S1.** Optimization of AgNP probe contents and BSA–OTA concentrations

No.	Volume of AgNP probes ( $\mu\text{L}$ ) <sup>a</sup>	OTA-BSA Con. (mg/mL)	FI <sub>T</sub> (OTA-free sample)	FI <sub>T</sub> (0.5 ng/mL of OTA sample)
1	3	0.4	340	398
2	3	0.8	226	326
3	3	1.2	264	341
4	3	1.6	211	336
5	3	2.0	187	259
6	4	0.4	269	403
7	4	0.8	134	274
8	4	1.2	216	302
9	4	1.6	202	259
10	4	2.0	149	192
11	5	0.4	197	331
12	5	0.8	62.4	254
13 <sup>b</sup>	5	1.2	0.00	254
14	5	1.6	0.00	216
15	5	2.0	0.00	173
16	7.5	0.4	149	269
17	7.5	0.8	0.00	120
18	7.5	1.2	0.00	173
19	7.5	1.6	0.00	139
20	7.5	2.0	0.00	0.00

a: OD<sub>450</sub> value of AgNP probes is 1.5; b: the optimal parameter combination.



**Figure S1.** Fluorescence intensity values of test and control line zones under a series of RuNP-bovine serum albumin concentration recorded with a commercial strip reader (underneath) and the corresponding stereogram of the lateral flow immunoassay sensor under a 450 nm LED light excitation (above). The vertical bars indicate the standard deviation ( $n = 3$ ).



**Figure S2.** (a) Immunoreaction kinetic curves of FIr, FIc, and T/C ratio by running in phosphate buffer solution containing 0.05 ng/mL of OTA; (b) Immunoreaction kinetic curves of T/C ratio by running red grape wine and juice samples containing 0.5 ng/mL of OTA.

**Table S2.** Comparison of the published LFIA with AgNP–RuNP–cLFIA sensor for OTA detection.

Reference	Label/signal	LOD (µg/kg)	Samples	LFIA type
Lai et al. <sup>[1]</sup> (2009)	AuNPs	10	Cereal	Qualitative
Anfossi et al. <sup>[2]</sup> (2011)	AuNPs	1.5	Cereal	Qualitative
Anfossi et al. <sup>[3]</sup> (2012)	AuNPs	1	Grape juice	Qualitative
		1	wine	
Sun et al. <sup>[4]</sup> (2016)	AuNPs	0.77	Cereal	Qualitative
This study	AgNPs/RuNPs	0.16	Grape juice	Qualitative
		0.31	wine	

## References

1. Lai, W.; Fung, D.Y.C.; Yang, X.; Renrong, L.; Xiong, Y. Development of a colloidal gold strip for rapid detection of ochratoxin A with mimotope peptide. *Food Control* **2009**, *20*, 791–795.
2. Anfossi, L.; D'Arco, G.; Baggiani, C.; Giovannoli, C.; Giraudi, G. A lateral flow immunoassay for measuring ochratoxin A: development of a single system for maize, wheat and durum wheat. *Food Control* **2011**, *22*, 1965–1970.
3. Anfossi, L.; Giovannoli, C.; Giraudi, G.; Biagioli, F.; Passini, C.; Baggiani, C. A Lateral flow immunoassay for the rapid detection of ochratoxin A in wine and grape must. *J. Agr. Food Chem.* **2012**, *60*, 11491–11497.
4. Sun, Y.; Xing, G.; Yang, J.; Wang, F.; Deng, R.; Zhang, G.; Hu, X.; Zhang, Y. Development of an immunochromatographic test strip for simultaneous qualitative and quantitative detection of ochratoxin A and zearalenone in cereal. *J. Sci. Food Agric.* **2016**, *96*, 3673–3678.